

PROCESS AND APPARATUS FOR THE DESTRUCTIVE  
DISTILLATION OF RUBBER

ABSTRACT OF THE DISCLOSURE

5           An improved process and apparatus for the destructive  
distillation or pyrolysis of rubber, such as used rubber tires,  
to produce liquid and gaseous hydrocarbons and a solid  
carbonaceous char. A heat transfer gas circulating in a  
10 circulation loop is used to cool the hot char produced in the  
distillation chamber of a distillation oven, the circulation  
loop having some means for removing the heat transferred to the  
heat transfer gas from the hot char. In one embodiment, two  
15 distillation ovens are operated in off-set, batchwise  
distillation cycles. The distillation cycles in the two ovens  
are coordinated so that a fresh charge of rubber feed is  
introduced into the distillation chamber of one of the ovens as  
the distillation of rubber in the other oven is concluded. The  
20 heat transfer gas is then circulated through both distillation  
chambers of the two ovens such that heat is transferred from  
the hot char produced in one oven at the end of a cycle to the  
heat transfer gas, and then transferred from the gas to the  
cold rubber feed introduced into the distillation chamber of  
25 the other oven at the beginning of a cycle to preheat the  
rubber feed. An effective means for determining the  
distillation end point and a pressurized distillation oven door  
seal are also provided.